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### VIII. Acknowledgements

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### IX. Appendices

The following tables 11-14 and figure 15 show the equipment specifications.

Table 11. Current circuit spec.

No.	Detail	Equipment
1	$S_n = 3.15$ MVA $U_{1n} = 20$ kV $U_{2n} = 2 * 380$ V $U_k\% = 6$ $X/R > 10$	Short Circuit Transformer (T1)
	$U_{rated} = 850$ V	Surge arrester to protect of Tr.
4	$L = 60\mu$ H $U_n = 1$ kV $I_{sc} = 31.5$ kA	Limiting current reactor LV (CLR)
1	$V_n = 24$ kV $I_n = 2500$ A $I_{sc} = 25$ kA Type: VD4 S.N: <b>230453</b>	(AB) Auxiliary vacuum CB (Auxiliary Breaker)
1	$V_n = 24$ kV $I_n = 2500$ A $I_{sc} = 25$ kA Type: VD4 S.N: <b>250321</b>	Vacuum CB (BB) (Back Up Breaker)
1	$V_n = 24$ kV $I_n = 2500$ A $I_{sc} = 25$ kA Type: VP4 S.N: <b>250238</b>	Vacuum CB (TO) (Test Object)

Table 12. Voltage circuit spec.

No.	Detail	Equipment	Row
93	4000nF	Main capacitor (Ch <sub>0</sub> ) 12kVAC± 10%	1
3	2000nF		
3	1000nF		
3	500nF		
3	250nF		
3	125nF		
1	40kV/30kVA	High voltage source(T <sub>3</sub> )	γ
1	140 kV_DC	High voltage diode with resitance	3
1	400V /100 kVA	Auto transformer	ε
3	20 taps from: 0.65 ~ 25 (mH)	Reactor (Lh <sub>1</sub> )	5
2	One 6 taps and one 5 taps capacitor	Capacitor (Ch1)	6
14	Resistances: 0.5 – 4096 Ω	Resitance (Rh1)	7
2	One 6 taps and one 5 taps capacitor	Capacitor (Ch <sub>4</sub> )	8
1	In 3 range of voltage	Surge Gap (SG)	9
1	With delay: ±10 μs	Trigger Unit	10
33	20 kVDC	Pneumatic CB 20 kV	11
3	60 kVDC	Pneumatic CB 60 kV	12
---	Vinyl epoxy and ST 38	Structure	13

Table 13. Control and monitoring equipment spec.

No.	Detail	Equipment
1	Texas Instruments DSP TMS320F2812, 150 MHz 16 ADC, 12 bit, 2 M/s Digital Input: 8 Digital Output:8 Output Relay :16	Microcontroller
1	Analogue Input:16 Analogue Output:16	Signal conditioning board
1	GUI MATLAB	Software
1	Fully shielded	Industrial Case
1	Intel	Computer
1	34 Unit Mazdak type	Control Panel
2	2 Channel, 60 MHz RIGOL	Oscilloscope

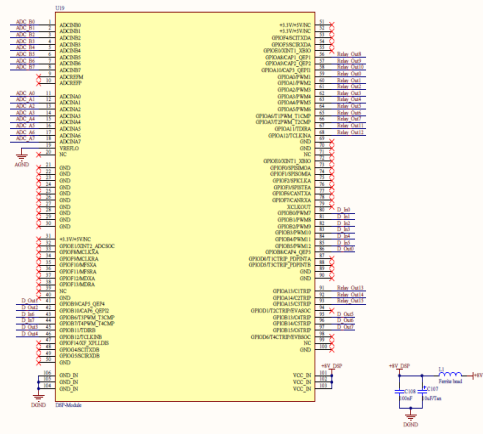


Figure 15. DSP model

Table 14. Sampling devices spec

